

## **NCHRP 14-16 - Guidelines for Vegetation Management**

<b>Project Data</b>	
<b>Funds:</b>	\$300,000
<b>Staff</b>	Christopher Hedges
<b>Responsibility:</b>	
<b>Research</b>	
<b>Agency:</b>	WeedSmart LLC
<b>Principal</b>	
<b>Investigator:</b>	Ian Heap
<b>Effective Date:</b>	4/28/2006
<b>Completion</b>	
<b>Date:</b>	4/28/2008

### **BACKGROUND**

Transportation agencies at the federal, state, and local levels spend considerable resources managing vegetation on the roadway right of way. At this time, there are no comprehensive Guidelines that all AASHTO member agencies can use to plan and implement vegetation management programs. As a result, there is considerable potential for duplication of effort in the setting of policies and procedures.

Research is needed to produce a resource for roadside managers to use in developing or enhancing their vegetation management programs. By creating guidelines that encourage sound practice, this research should help highway agencies to manage their resources more effectively.

These Guidelines will also help the agency promote the benefits of sound vegetation management practices to decision makers and the general public.

### **OBJECTIVE**

The objective of this project is to develop proposed AASHTO Guidelines for management of roadside vegetation.

### **Status:**

A first draft of the guidelines has been reviewed and a second draft is expected in early April

## **Draft Guidelines – Table of Contents**

### **1. CONTENTS**

### **2. INTRODUCTION**

### **3. EXECUTIVE SUMMARY OF BENEFITS**

### **4. SCOPE OF GUIDELINES**

### **4. ORGANIZATION OF GUIDELINES**

### **5. DEFINITIONS**

### **6. OBJECTIVES OF ROADSIDE VEGETATION MANAGEMENT**

- a. Safety
- b. Economics
- c. Erosion Control
- d. Environmental
- e. Legal and Regulatory compliance
- f. Aesthetics
- g. Sustainable Transportation
- h. Other Objectives

### **7. DETERMINING PROGRAM GOALS AND PERFORMANCE MEASURES**

- a. Develop a Broad Mission Statement Outlining the Ultimate reason for the Program's Existence
- b. Establish and Prioritize Goals
- c. Balance Cost and Benefits
- d. Determine Performance Measures

### **8. PUBLIC AND LEGAL ISSUES**

- a. Laws and Regulations related to Vegetation Management
- b. Environmental Stewardship
- c. Tort Liability
- d. Customer Demands and Expectations
- e. Public Communication and Involvement
- f. Partnership/Coordination with other Stakeholders

### **9. INCORPORATING VEGETATION MANAGEMENT AS A PART OF PROJECT DEVELOPMENT, DELIVERY AND CONSTRUCTION**

- a. Planning Phase
- b. Design Phase
  - i. Design Acceptance
- c. Construction Phase
- d. Maintenance Acceptance

### **10. ROADSIDE VEGETATION MANAGEMENT ZONES**

- a. Defining Roadside Vegetation Management Zones
- b. Vegetation Objectives for each Zone
- c. Defining Linear Areas
- d. Other Management Areas

### **11. VEGETATION MANAGEMENT PRACTICES**

- a. Integrated Roadside Vegetation Management (IRVM)
- b. Establishing and Maintaining Sustainable Vegetation.
- c. Establishing Low-Maintenance Vegetation
- d. Mechanical Control
- e. Chemical Control Methods
- f. Target Species
- g. Cultural Control
- h. Permanent vegetation control (barriers)

- i. Biological Control
- j. Emerging technologies

## **12. ROADSIDE VEGETATION ASSET INVENTORY AND CONDITION**

- a. Introduction
- b. Assessing Existing Conditions
- c. Methods to collect the inventory data
- d. Integration of inventory and conditions survey with zone concepts
- e. Integration of inventory with existing asset management systems and budget

## **13. PROGRAM BUDGETING AND COSTS**

- a. Prioritize the Budget Dollars
- b. Ensure Overhead and Administration Costs are Included in Budget
- c. Prepare an Itemized Budget of Expected Costs
- d. Make Adjustment as Necessary Based on the Performance of the Program
- e. Monitor Spending Compared to Budget
- f. Alternative Funding Sources

## **14. PROGRAM MANAGEMENT**

- a. Structure of Vegetation Management Personnel
- b. Operations Personnel
- c. Expertise and Credential Requirements (authority and duties of staff)
- d. Research Services
- e. Legal Services
- f. Quality Assurance
- g. Equipment Resources
- h. Facilities
- i. In-house vs. Contracting Activities (good examples from both methods)
- j. Long-Term Life-Cycle Management Plan
- k. Performance Monitoring
- l. Required Documentation
- m. Public Outreach and Public Relations

## **15. CONTRACTS AND PROCUREMENTS**

- a. Contract methods
- b. Purchase Orders
- c. Procurement Strategy
- d. Prequalification Lists

## **16. SURVEY**

## **17. COMPUTER MODEL**

## **18. REFERENCES**

## **19. APPENDIX A – Full Survey Results**

## **20. APPENDIX B – Common Invasive Weeds**

## **21. APPENDIX C – Zone Drawings**

## **22. APPENDIX D – Typical Inventory Layouts**

## **23. APPENDIX E– Typical Performance Measures**

## **24. APPENDIX G – Definitions of Technical Terms**

# **AASHTO Technical Committee on Environmental Design**

Spring Meeting

April 8, 2006

Agenda Item : NCHRP 15-33 Discussion Points

Chris Hedges

Keith Robinson

## **1. NCHRP –Organization and Function**

### **a. Organization**

**1.** Administered by the Transportation Research Board (TRB) and sponsored by individual state departments of transportation of the American Association of State Highway and Transportation Officials (AASHTO), in cooperation with the Federal Highway Administration (FHWA), the National Cooperative Highway Research Program (NCHRP) was created in 1962 as a means to conduct research in acute problem areas that affect highway planning, design, construction, operation, and maintenance nationwide.

a. The state DOTs are the sole sponsors of the NCHRP. Support is voluntary and funds are drawn from the states' Federal-Aid Highway apportionment of State Planning and Research (SPR) funds. Funds can be spent only for the administration of problems approved by at least two-thirds of the states. Each state's allocation amounts to 5 and 1/2 percent of its SPR apportionment.

## **2. Program Description**

Each year in early July, the AASHTO Standing Committee on Research (SCOR) solicits problems from three authorized sources:

- (1) AASHTO member transportation departments,
- (2) The chairs of AASHTO's committees and subcommittees,
- (3) The Federal Highway Administrator.

Problem statements are due by September 15 of the same year; on receipt, FHWA and NCHRP evaluations are performed. These evaluations are sent to submitters in mid-November, and submitters have until early December to comment on the evaluations or to withdraw the problem statement. The NCHRP also uses evaluation panels to assess problem statements in some of the more popular subject areas, such as bridges, materials, and traffic and safety. The collective thoughts of the panel are conveyed back to the submitter, instead of FHWA and NCHRP evaluations.

Submitters are encouraged to do a literature search, before submitting, to make sure the problem hasn't already been solved or isn't being studied.

## **AASHTO Technical Committee on Environmental Design**

Spring Meeting

April 8, 2006

At the same time that new problem candidates are submitted, NCHRP panels and staff are also working on recommendations for continuations of projects begun in earlier years. Each December, a report on the continuation projects and new problem candidates goes to the SCOR and the AASHTO Research Advisory Committee (RAC) with a ballot for rating the candidates according to priority.

The ratings are returned to the SCOR Secretary (i.e., the Director of TRB's Cooperative Research Programs) and are translated into priority rankings based on the average ratings of SCOR and RAC. A summary report is sent to the SCOR for review prior to its meeting in Washington, D.C., to determine final priorities and formulate a program. This meeting is held annually in late March. Based on the funding expected from the Federal-Aid Highway apportionments for the given fiscal year, SCOR determines which completed or ongoing projects should receive additional funding for further work and which new problem submittals should be programmed. An Announcement of Research Projects is prepared each year in April. This Announcement details the preliminary scopes of work that will be considered in requests for proposals.

SCOR sends a report to the AASHTO Board of Directors requesting approval of the program. The final program for each year consists of those continuations and new problems that receive a favorable vote by two-thirds or more of the Member Departments. After AASHTO approves the program, it is referred to the National Academies for administration. After acceptance by the National Academies (authority delegated to TRB's Executive Committee Subcommittee for the NCHRP) for administration by the Transportation Research Board, the problems are assigned to panels of experts who provide guidance on the technical aspects of the research and translate the AASHTO problems into NCHRP research project statements with well-defined objectives. On the basis of these statements, TRB solicits research proposals from private and public research organizations that can demonstrate capability and experience in the problem area to be researched. These organizations include universities, nonprofit institutions, consulting and commercial firms, and individual consultants. Guidance for the preparation of proposals is included in the NCHRP brochure,

### **b. Function**

1. Eight research fields
  - a. Administration
  - b. Design
  - c. Soils and Geology
  - d. Traffic
  - e. Transportation Planning
  - f. Materials and Construction

## **AASHTO Technical Committee on Environmental Design**

Spring Meeting

April 8, 2006

- g. Maintenance
  - h. Special Projects
- 2. How an idea becomes a research project
- 3. Project panels
  - a. Composition
  - b. Purpose
  - c. Meetings
  - d. Contract Administration

### **2. NCHRP Panel 15-33:**

#### **a. Objective**

- 1. Develop a comprehensive, online transportation landscape and environmental design guide that visually illustrates and integrates key principals and best practices of landscape and road ecology to better inform planning and design alternatives, decisions and innovations that contribute to cost effective, successful, enduring, and context sensitive solutions in transportation planning, project development And operations.
- 2. Project Panel:
  - a. Membership
- 3. Engaged Stakeholders
  - b. AASHTO TCED
  - c. State DOT representatives
  - d. others
- 4. Progress
  - e. Major tasks
  - f. Review and comment activity
  - g. Panel bi-monthly teleconferences
  - h. Panel meetings in D.C.
- 5. Current Schedule
- 6. Next Steps
  - a. Status of previous AASHTO TCED comments
  - b. See quarterly update from contractor
  - c. Interview remaining stakeholders
  - d. Panel meeting
  - e. Final revisions
  - f. Final review by Panel
  - g. Submit for input by AASHTO TCED
  - h. Submission of final document by Contractor to NCHRP
  - i. Forwarding for review and disposition by AASHTO
  - j. Distribution (web and print(?))